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Land Value Capture as a Planning Tool for Managing Peri-Urban Expansion in India

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Abstract: ***Rapid urbanization in India has resulted in extensive peri-urban expansion characterized by unplanned land development, infrastructure deficits, and speculative land markets. Public investments in transport and infrastructure significantly increase land values in these areas; however, the benefits of such investments are largely captured privately, while public agencies face financial constraints. Land Value Capture (LVC) mechanisms provide a means to recover a portion of publicly generated land value increments and reinvest them in urban infrastructure and planned development. This study examines LVC as a spatial planning tool rather than merely a fiscal mechanism, with specific emphasis on its role in managing peri-urban expansion. A qualitative and comparative methodology is adopted using secondary data, policy review, and case study analysis of international and Indian examples, including São Paulo, Germany, Mohali, and Bengaluru. The findings indicate that land-based LVC instruments such as land pooling and land readjustment are particularly effective in peri-urban contexts as they enable infrastructure provision before development and reduce speculative growth. The paper proposes a strategic framework for integrating LVC into peri-urban planning in India to support infrastructure-led, equitable, and sustainable urban expansion.***

Keywords: Land Value Capture; Peri-Urban Expansion; Urban Planning; Infrastructure Finance; Land Pooling; India

I. INTRODUCTION

Indian cities are expanding rapidly beyond their formal municipal boundaries. This outward expansion, commonly described as peri-urban growth, is shaped by population pressure, infrastructure investment, economic activity, and changing land markets. Peri-urban areas experience accelerated land-use conversion, often without adequate planning control, resulting in irregular layouts, environmental degradation, inadequate infrastructure, and high future service costs.

A defining feature of peri-urban expansion is the sharp increase in land values following public intervention. Investments such as highways, ring roads, metro rail corridors, airports, and industrial zones significantly enhance accessibility and development potential. However, these publicly generated land value gains are largely captured by private landowners and developers, while public agencies responsible for infrastructure provision face persistent financial constraints. This imbalance undermines equitable development and leads to inefficient urban growth. Land Value Capture (LVC) mechanisms address this challenge by enabling governments to recover a portion of the land value increment generated through public actions. While LVC has traditionally been discussed as a fiscal or municipal finance instrument, this paper argues that LVC should be understood as a planning tool that can actively guide peri-urban expansion. By linking infrastructure provision, land-use regulation, and land value appreciation, LVC can facilitate infrastructure-led, compact, and planned urban growth.

II. REVIEW OF LITERATURE

Literature on peri-urbanization highlights the complex transformation occurring at the interface of urban and rural systems. Scholars note that peri-urban areas experience weak institutional control, fragmented governance, and intense speculative land markets, making them particularly vulnerable to unplanned development. Studies emphasize that infrastructure investment is the primary trigger for land value appreciation in peri-urban regions. Land economics literature introduces the concept of “unearned increment,” which refers to land value gains arising from public investment rather than private effort. Classical theorists such as Henry George argue that these gains should be socially captured to promote equity and efficiency. Contemporary urban studies extend this argument by linking land value capture to urban planning and infrastructure finance. Global research on LVC identifies a range of instruments, including betterment levies, impact fees, premium FAR, transferable development rights (TDR), land pooling, and land readjustment. International experiences suggest that land-based mechanisms are particularly effective in managing greenfield and peri-urban development. In India, however, LVC remains fragmented, inconsistently applied, and weakly integrated with statutory planning processes, highlighting the need for a coherent framework.

III. METHODOLOGY

This study adopts a qualitative, exploratory, and comparative research methodology to examine the role of land value capture in managing peri-urban expansion. The research is based primarily on secondary data sources, including academic publications, government policy documents, planning acts, master plans, and institutional reports.

A comparative case study approach is employed to analyze the functioning of LVC mechanisms across different governance and market contexts. Two international cases (São Paulo and Germany) and two Indian cases (Mohali and Bengaluru) are selected based on their relevance to peri-urban development and availability of documented evidence. The analysis focuses on institutional arrangements, implementation processes, spatial outcomes, and applicability to the Indian peri-urban context.

IV. CASE STUDY ANALYSIS

A. São Paulo, Brazil

São Paulo has implemented one of the world's most advanced LVC systems through mechanisms such as Outorga Onerosa and Certificates of Additional Construction Potential (CEPACs). These instruments allow the municipality to auction development rights prior to construction, generating substantial revenue for infrastructure investment. The case demonstrates how market-based LVC tools can finance infrastructure upfront while guiding density toward designated urban operation zones.

B. Germany

Germany's land readjustment system exemplifies a land-based approach to peri-urban development. Landowners pool land in expansion areas, allowing municipalities to provide infrastructure and reorganize plots without compulsory acquisition. Infrastructure costs are recovered through land contribution, resulting in planned layouts and infrastructure provision before development.

C. Mohali, Punjab

Mohali's peri-urban growth has been driven by airport development and regional connectivity. The development authority implemented land pooling and external development charges to finance infrastructure and guide planned sector development. This case demonstrates the practical feasibility of land-based LVC mechanisms in Indian peri-urban contexts.

D. Bengaluru, Karnataka

Bengaluru employs betterment charges, premium FAR, and TDR to capture land value. While these mechanisms have enabled partial recovery of land value gains, fragmented governance and valuation inconsistencies have limited their effectiveness. The case highlights the importance of institutional coordination for successful LVC implementation.

V. RESULTS AND DISCUSSION

The comparative analysis reveals several key outcomes. First, peri-urban areas experience the highest land value appreciation due to public investment, yet they remain weakly planned. Second, land-based LVC mechanisms enable infrastructure provision prior to development, reversing the conventional pattern of infrastructure retrofitting. Third, LVC mechanisms reduce speculative land behavior by linking land value gains to planning controls and development obligations.

The findings also emphasize that institutional capacity plays a critical role in LVC success. Strong legal frameworks, transparent valuation systems, and coordinated governance structures enhance implementation outcomes. In contrast, fragmented institutions undermine the effectiveness of LVC tools, as observed in several Indian contexts.

VI. PROPOSED FRAMEWORK FOR PERI-URBAN INDIA

Based on the findings, the paper proposes a strategic framework for integrating LVC into peri-urban planning in India. The framework emphasizes five core components: legal integration of LVC instruments within planning acts, institutional strengthening through dedicated LVC units, spatial integration of LVC with growth corridors and infrastructure plans, transparent land valuation systems, and reinvestment of captured value within peri-urban areas.

By embedding LVC into statutory planning processes, the framework positions value capture as a proactive planning mechanism rather than a reactive fiscal tool.

VII. CONCLUSION

Peri-urban expansion poses significant challenges for rapidly urbanizing regions in India, particularly in terms of infrastructure financing and spatial governance. This paper demonstrates that Land Value Capture mechanisms offer an effective strategy for addressing these challenges by converting publicly generated land value appreciation into resources for infrastructure-led development. Land-based LVC instruments such as land pooling and land readjustment emerge as particularly suitable for peri-urban contexts. Strengthening institutional capacity and integrating LVC with planning frameworks can transform peri-urban expansion into a planned, equitable, and financially sustainable process.

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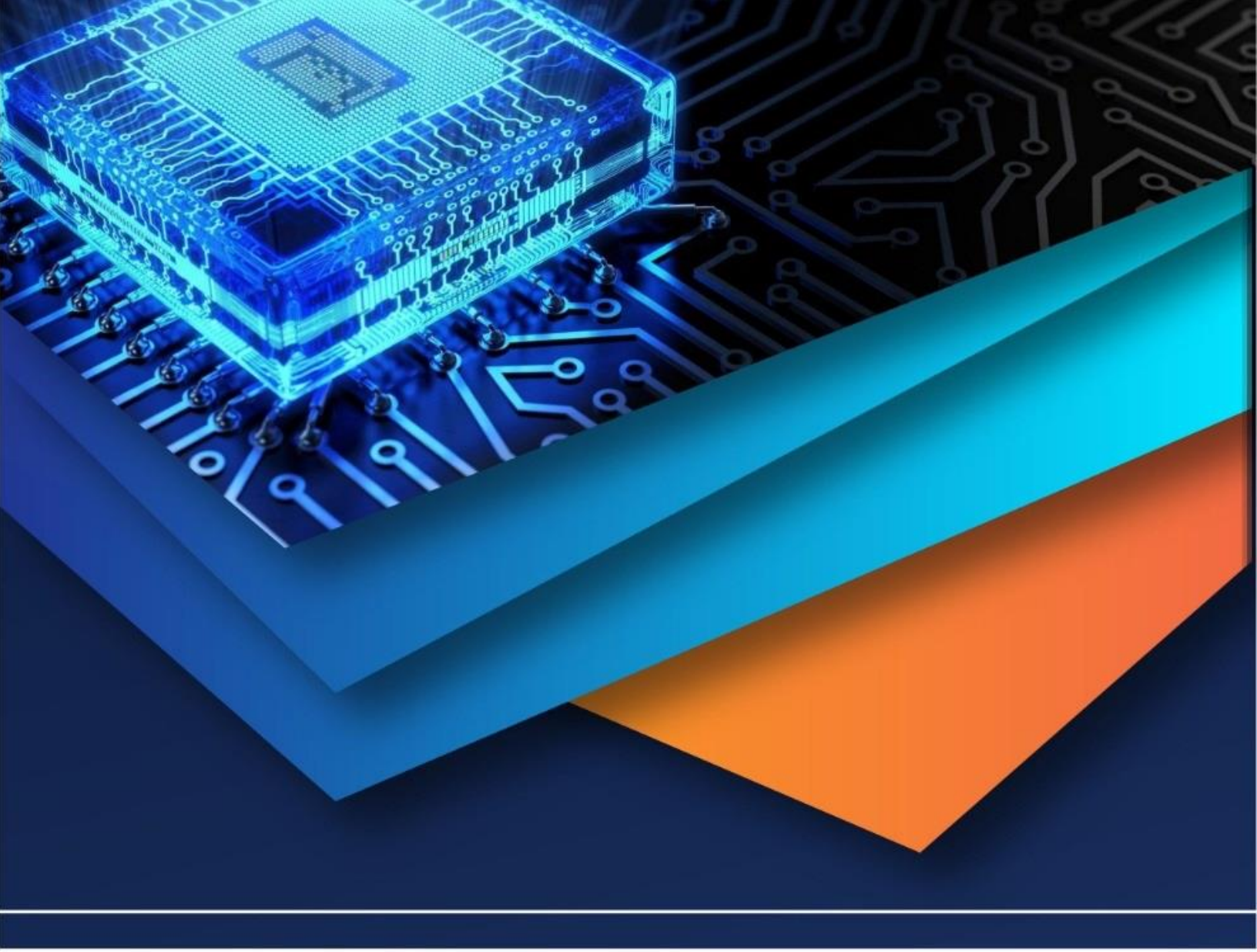

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